segmented at least in a part, which acts as the fast axis collimator and comprises a plurality of correction optics segments which follow one another in the slow axis (X axis).

43. The laser diode arrangement as claimed in claim 42, wherein the at least one correction optics are formed by at least one lens element which is made as the fast axis collimator and the slow axis collimator.

44. The laser diode arrangement as claimed in claim 43, wherein the at least one lens element comprises an entry side with a lens surface which acts as the fast axis collimator, with a cylinder lens surface with the axis lying in a direction of the slow axis (X axis) and an exit side with at least one lens surface which acts as the slow axis collimator, with at least one cylinder lens surface with an axis lying in the fast axis (Y axis).

45. The laser diode arrangement as claimed in claim 42, wherein the at least one correction optics has a plurality of lens elements which adjoin one another in the direction of the slow axis (X axis).

46. The laser diode arrangement as claimed in claim 42, wherein the at least one correction optics is produced in one piece or monolithically with a plurality of lens elements.

47. The laser diode arrangement as claimed in claim 43, wherein each lens element of the correction optics is assigned to an emitter element.

48. The laser diode arrangement as claimed in claim 43, wherein the at least one correction optics is segmented and comprises at least two correction optics segments which follow one another in a direction of the slow axis (X axis).

49. The laser diode arrangement as claimed in claim 48, wherein the at least one correction optics segment has at least two lens element.

50. The laser diode arrangement as claimed in claim 42, wherein the at least one correction optics have segments that are adjusted and fixed independently of one another.

51. The laser diode arrangement as claimed in claim 42, wherein the at least one correction optics collimates or shapes beams of the at least one row of emitter elements into beams which are parallel or roughly parallel to one another in the plane of the slow axis (X axis).

52. The laser diode arrangement as claimed in claim 42, wherein the at least one correction optics collimates or shapes the beams of the at least one row of emitter elements into beams which are parallel or roughly parallel to one another in the plane of the slow axis (X axis) and adjoin one another in the direction of the slow axis (X axis) without overlapping one another.

53. The laser diode arrangement as claimed in claim 42, wherein a part of the at least one correction optics which acts as the slow axis collimator has a plurality of lens elements which in their optical action correspond to cylinder lenses which are oriented with their axis in the fast axis (Y axis), and which adjoin one another in the direction of the slow axis and of which one is assigned to one emitter element at a time.

54. The laser diode arrangement as claimed in claim 42, wherein the at least one correction optics has at least one fast axis collimator for at least one row of emitter elements which forms a segmented part of the at least one correction optics and which comprises a plurality of collimator segments which follow one another in the slow axis (X axis).

55. The laser diode arrangement as claimed in claim 54, wherein the plurality of collimator segments of the fast axis collimator of the at least one row of emitter elements are adjusted and fixed independently of one another.

56. The laser diode arrangement as claimed in claim 42, wherein the at least one correction optics has at least one slow axis collimator located in a beam path (Z axis) following the fast axis collimator.

57. The laser diode arrangement as claimed in claim 56, wherein the slow axis collimator is formed by a host of cylinder lens elements which in their optical action correspond to cylinder lenses and which are oriented with their axis in the fast axis (Y axis), which adjoin one another in a direction of the slow axis and of which one is assigned to one emitter element at a time.

58. The laser diode arrangement as claimed in claim 56, wherein in the beam path following the at least one correction optics there is focusing optics for focusing beams of the emitter elements at a common focus.

59. The laser diode arrangement as claimed in claim 42, wherein the segmented part of the at least one correction optics has from two to five segments.

60. The laser diode arrangement as claimed in claim 42, wherein there is a connection area or gap between two segments which follow one another between two emitter elements, the connection area being in a middle between the two emitter elements.

61. The laser diode arrangement as claimed in claim 42, wherein a part of the at least one correction optics which acts as the slow axis collimator is located in a plane (E) which is defined by the fast axis (Y axis) and the slow axis (X axis) and is located in a beam path where edge beams of the beams diverging in the slow axis (X axis) intersect with their edge beams.

62. The laser diode arrangement as claimed in claim 61, wherein the part of the at least one correction optics acting as the slow axis collimator is formed by several cylinder lenses combined into a monolithic slow axis collimator.

63. The laser diode arrangement as claimed in claim 54, wherein the plurality of collimator segments of the fast axis collimator are cylinder lenses or act as cylinder lenses.

64. The laser diode arrangement as claimed in claim 42, wherein there are at least two rows of emitter elements and wherein the rows with the slow axis (X axis) of the emitter elements are parallel to one another.

65. The laser diode arrangement as claimed in claim 42, wherein there are at least two rows of emitter elements and wherein the emitter elements of the rows have active layers located in parallel planes.

66. The laser diode arrangement as claimed in claim 42, wherein there are at least two rows of emitter elements and wherein the at least two rows are offset against one another at least in the slow axis (X axis).

67. The laser diode arrangement as claimed in claim 42, wherein there are at least two rows of emitter elements and wherein in a beam path following the fast axis collimator there is at least one optical coupling element or deflection element

to combine beams of the at least two rows into a common beam cluster.

68. The laser diode arrangement as claimed in claim 42, wherein there are at least two rows of emitter elements in at least one stack, wherein the at least two rows of emitter elements in the stack are offset against one another in a direction of the fast axis (Y axis) and wherein for each row of emitter elements there is one separate, segmented part of the correction optics or segmented fast axis collimator with at least two segments.

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69. The laser diode arrangement as claimed in claim 42, wherein the at least one row of emitter elements, has at least one row of emitter elements with a segmented part of the at least one correction optics or a segmented fast axis collimator.

70. The laser diode arrangement as claimed in claim 42, wherein for each row of emitter elements there are separate correction optics.

71. The laser diode arrangement as claimed in claim 42, wherein for each row of emitter elements (4) there is a separate slow axis collimator (6).

72. The laser diode arrangement as claimed in claim 42, wherein there are rows of emitter elements in at least two stacks, the rows in each stack being offset against one another in a direction of the fast axis (Y axis).

73. The laser diode arrangement as claimed in claim 72, wherein the at least two stacks are offset against one another in a direction of the slow axis (X axis).

74. The laser diode arrangement as claimed in claim 43, wherein planes of the rows of emitter elements of at least two stacks are offset in a direction of the fast axis (Y axis) such that the planes of the rows of one stack lie between the planes of the rows of another stack.

75. The laser diode arrangement as claimed in claim 74, wherein an optical means with which the beams of the emitter elements in the slow axis (X axis) are shifted such that the beams of the emitter elements of all stacks form a common beam cluster.

76. The laser diode arrangement as claimed in claim 42, further comprising focusing optics which are common to the beams of all emitter elements.

77. The laser diode arrangement as claimed in claim 42, wherein at least one row of emitter elements is formed by a diode laser bar.

78. The laser diode arrangement as claimed in claim 77, wherein the diode laser bar is a semiconductor laser chip with several emitters.

79. The laser diode arrangement as claimed in claim 42, wherein the emitter elements each comprise at least one emitter which radiates laser light.

80. The laser diode arrangement as claimed in claim 42, wherein the emitter elements each comprise at least two emitters (4) which are located at a distance from one another which is smaller than the mutual distance of the emitter elements in each row.